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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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WO 02/064788 A3

(54) Title: COMPOSITIONS AND METHODS RELATING TO LUNG SPECIFIC GENES AND PROTEINS

(57) Abstract: The present invention relates to newly identified nucleic acids and polypeptides present in normal and neoplastic lung cells, including fragments, variants and derivatives of the nucleic acids and polypeptides. The present invention also relates to antibodies to the polypeptides of the invention, as well as agonists and antagonists of the polypeptides of the invention. The invention also relates to compositions comprising the nucleic acids, polypeptides, antibodies, variants, derivatives, agonists and antagonists of the invention and methods for the use of these compositions. These uses include identifying, diagnosing, monitoring, staging, imaging and treating lung cancer and non-cancerous disease states in lung, identifying lung tissue, monitoring and identifying and/or designing agonists of polypeptides of the invention. The uses also include gene therapy, production of transgenic animals and cells, and production of engineered lung tissue for treatment and research.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/45080

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C07K14/47 C12Q1/68 C12N5/10 C07K16/18
G01N33/53

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, BIOSIS, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 00 08206 A (MACINA ROBERTO A ;SUN YONGMING (CN); YANG FEI (CN); RECIPON HERVE) 17 February 2000 (2000-02-17) see pages 16-27, examples of quantitative gene expresion of LSG, claims 1-7 ---	1-17
Y	WO 96 02552 A (BOLLON ARTHUR P ;CYTOCLONAL PHARMACEUTICS INC (US); TORCZYNSKI RIC) 1 February 1996 (1996-02-01) the whole document ---	1-17
Y	WO 99 40190 A (SHIMADA YOSHIKAZU ;NAGATA MASAMI (JP); OZAKI KOUICHI (JP); HORIE M) 12 August 1999 (1999-08-12) claims 1-23 and translated description in the derived EP1074621 application. ---	1-17 -/-

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

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Vix, O

INTERNATIONAL SEARCH REPORT

International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	OZAKI K ET AL: "ISOLATION AND CHARACTERIZATION OF A NOVEL HUMAN LUNG-SPECIFIC GENE HOMOLOGOUS TO LYSOSOMAL MEMBRANE GLYCOPROTEINS 1 AND 2: SIGNIFICANTLY INCREASED EXPRESION IN CANCERS OF VARIOUS TISSUES" CANCER RESEARCH, AMERICAN ASSOCIATION FOR CANCER RESEARCH, BALTIMORE, MD, US, vol. 58, 15 August 1998 (1998-08-15), pages 3499-3503, XP002929103 ISSN: 0008-5472 the whole document	1-17

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/45080

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
Although claim 16 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-17 (all partially)

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

Invention 1: claims 1-17 (all partially)

An isolated nucleic acid molecule comprising the nucleic acid of SEQ ID N 1, and its encoded amino acid sequence of SEQ ID N 116.

Inventions 2-115: claims 1-17 (all partially)

An isolated nucleic acid molecule comprising the nucleic acid of SEQ ID N 2 to 115, and their encoded amino acid sequence of SEQ ID N 117-208.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/45080

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
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